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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,088	11/21/2003	Rahul Srivastava	BEAS-01340US2	2249

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EXAMINER	
NGUYEN, QUANG N	
ART UNIT	**PAPER NUMBER**
2141	

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/719,088	SRIVASTAVA ET AL.	
	Examiner	Art Unit	
	Quang N Nguyen	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/22/2005 has been entered.

Claims 1, 4, 11, 13-14, 18 and 20 have been amended. Claims 1-20 remain for examination.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 10/719,611. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims merely restate the same elements of the claims of the copending Application No. 10/719,611.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4-11, 13-15 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Nageswaran (US 5,991,792).

6. As to claim 1, Nageswaran teaches a system and method for dynamically managing a thread pool of reusable threads in a computer system, comprising:

computer code for triggering a resource pool shrink check *(whenever a new method request is being processed or a method request is completed and a thread is returned to the thread pool, the thread manager 132 checks whether thread pool reduction is needed)* (Nageswaran, C3: L30-46);

computer code for determining that pool shrinking is necessary *(when the server thread manager 132 determines that the thread use ratio is high, then the server thread manager commences the process of reducing number of threads in the thread pool 136)* (Nageswaran, C3: L8-14);

computer code for reducing resources that have been determined to be at least one of not created successfully and not able to be refreshed in a unavailable deque *(threads 138 that are idle, i.e., unavailable, are prime candidates to be released and thread manager 132 would identify these threads in the idle thread queue 140, and mark their state as "Being Removed")* (Nageswaran, C4: L6-9); and

computer code for reducing resources that have been determined to be available in an available deque *(threads 138 that are created and/or available but not dedicated for any particular transaction are prime candidates to be released and thread manager 132 would identify these threads and mark their state as "Being Removed")* (Nageswaran, C4: L6-9).

7. As to claim 4, Nageswaran teaches the computer program product of claim 1, further includes computer code for detecting resources contained in the available or the unavailable deque *(the thread manager 132 maintains an idle thread queue 140 that contains a thread ID for all idle reusable threads 138 and a dedication table 141 storing a dedicated thread ID 142 with a particular client or transaction ID 143)* (Nageswaran, C2: L42-47).

8. As to claim 5, Nageswaran teaches the computer program product of claim 1, further includes computer code for determining the number of resources in the resource pool *(a total number Y of threads 138)* is greater than a maximum resource pool threshold value *(a threshold number X of threads 138)* (Nageswaran, C3:L63 – C4:L18).

9. As to claim 6, Nageswaran teaches the computer program product of claim 5, wherein the maximum resource pool threshold value is set by a programmable attribute *(the thread manager 132 has identified that the size is to be shrunk to a configured, i.e., predefined, threshold number X of threads 138)* (Nageswaran, C3:L63 – C4:L18).

10. As to claims 7-10, Nageswaran teaches the computer program product of claim 1, further includes computer code for reducing resources in an available (or unavailable) deque to coincident with a maximum available (or unavailable)

resources threshold *(ideally, the shrinkage should result in the reduction of threads down to a configured minimum number of threads 138 in the pool 136, if and only if the number of requests is below the number of minimum threads in the thread pool 136)*, wherein resources in the available (or unavailable) deque are destroyed *(threads that are identified and marked for "Being Removed" are deleted/removed)* (Nageswaran, C4: L1-40).

11. As to claim 11, Nageswaran teaches a computer program product for performing resource pool maintenance for an application server, comprising:

computer code for triggering a test for pool resources *(whenever a new method request is being processed or a method request is completed and a thread is returned to the thread pool, the thread manager 132 checks whether thread pool reduction is needed)* (Nageswaran, C3: L30-46);

computer code for determining whether at least one of the resources is functioning properly by performing a test on pool resources *(determining whether any of threads 138 is idle, not dedicated for any particular transaction, i.e., available, or busy, i.e., functioning properly)*; and refreshing pool resources based on the pool resources testing *(when the server thread manager 132 determines that the ratio of number of reusable threads 138 in the thread pool 136 to the number of requests being processed or the thread use ratio 146 is high, then commences the thread pool reduction operation, i.e., refreshing pool resources)* (Nageswaran, C3: L8-14 and C4: L6-9).

12. As to claim 13, Nageswaran teaches the computer program product of claim 11, wherein said determining whether at least one of the resources is functioning properly by performing a test on pool resources includes refreshing resources determined to not be functioning properly *(threads, that are not dedicated for any particular transaction and are idle, are identified and marked as "Being Removed" to be released)* (Nageswaran, C4: L6-9).

13. Claims 14-15 and 20 are corresponding computer program product claims of computer program product claims 1 and 4; therefore, they are rejected under the same rationale.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claims 2-3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nageswaran, in view of June et al. (US 2004/0045008 A1), herein after referred as June.

16. As to claims 2-3, Nageswaran teaches the computer program product of claim 1, but does not explicitly teach determining that a period of time set by a programmable attribute has expired and performing the resource pool shrink check at the expiration of the period of time.

In a related art, June teaches a connector architecture implementation pre-configures and manages the growth and reduction of a connection pool, wherein the connector determines if the managed connection usage decrease has existed for a specified period of time *(i.e., a period of time has expired)*, which maybe configured as a parameter in the shrink-period minutes element located in an XML formatted descriptor file of the connector architecture implementation, then the size of the connection pool is decreased in step 540 (June, paragraph [0032]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Nageswaran and June to determine that a period of time set by a programmable attribute has expired and perform the resource pool shrink check at the expiration of the period of time since such methods were conventionally employed in the art to

provide the system (administrator) a mechanism to monitor and make changes to the resource/thread pool within the application server dynamically as needed.

17. Claim 12 is a corresponding computer program product claim of computer program product claim 2; therefore, it is rejected under the same rationale.

18. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nageswaran, in view of in view of Sharma et al. (US 6,182,109), herein after referred as Sharma.

19. As to claims 16-17, Nageswaran teaches the computer program product of claim 14, but does not explicitly teach scheduling resource creation for each resource in the unavailable/reserved queue.

In a related art, Sharma teaches a system and method for dynamically managing a pool of execution units *(threads)* in a server system, wherein the server management thread is wakened either by a timer *(i.e., scheduling resource creation by a scheduler)* or by signals for thread allocation *(creation)* when the number of unused threads in the thread pool falls below some lower limit (Sharma, C25: L27-31).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Nageswaran

and Sharma to include scheduling resource creation for each resource in the unavailable/reserved queue since such methods were conventionally employed in the art to allow the system to create/allocate resource/thread to the server pool at the timer interval or at when a connection request is received and no available managed threads/connections exist, i.e., when actually needed, in order to improve the system performance by not affecting the server's ability to service requests.

20. As to claim 18, Nageswaran-Sharma teaches a computer program product for performing resource creation in a connection pool in an application server, comprising:

computer code for generating a resource in connection pool *(at server initialization, a "MinThreads" number of threads are created and inserted into the thread pool)*;

computer code for determining that the resource was created successfully in the connection pool; and moving the resource to an available queue when successfully generation of the resource is confirmed, otherwise moving the resource to an unavailable deque for tracking resources that are not created successfully *(after being created, inherently read as created successfully, the "MinThreads" number of threads are inserted into the thread pool, i.e., inserted into the "available" thread pool)* (Sharma, C23: L55-59).

21. As to claim 19, Nageswaran-Sharma teaches the computer program product of claim 18, further comprises determining that a period of time has expired and generating a resource at the expiration of the period of time *(the threads will only be added immediately when UnusedThreads falls below the MinThreads limit, otherwise, threads will be delayed until the next timer interval, i.e., delay until the expiration of the period of time)* (Sharma, C25: L39-43).

Response to Arguments

22. In the remarks, Applicant argued in substance that

(**A**) Prior Art fails to teach, suggest or otherwise render obvious "reducing resources that have been determined to be at least one of not created successfully and not able to be refreshed in an unavailable deque; and reducing resources that have been determined to be available in an available deque", as recited by claims 1 and 14.

As to point (**A**), **Nageswaran** teaches a system and method for dynamically managing a thread pool of reusable threads in a computer system, wherein as the thread manager 132 commences the process of reducing number

of threads 138 in the thread pool 136, threads 138 that are idle *(unavailable, i.e., not able to be refreshed)* are prime candidates to be released *(i.e., reduced)* and the thread manager 132 would identify these idle threads *(i.e., read as unavailable threads)* in the idle thread queue 140 by their thread ID, and mark their state as "Being Removed" *(i.e., reducing resources in an unavailable queue)*; and threads 138 that are created and/or available but not dedicated for any particular transaction are prime candidates to be released and the thread manager 132 would identify these threads *(i.e., read as available threads)* and mark their state as "Being Removed" *(i.e., reducing resources in an available deque)* **(Nageswaran, C3: L54-67 and C4: L1-18)**.

(**B**) Prior Art teaches away from the recited claim limitations as to its purpose as well as its approach.

As to point (**B**), in response to applicant's argument that the Prior Art ***(Nageswaran)*** teaches away from the recited claim limitations, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

(**C**) Applicant argued that the Office Action's inference would require an impermissible exercise in hindsight.

As to point (**C**), in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

(**D**) Prior Art fails to teach, suggest or otherwise render obvious "determining whether at least one of the resources is functioning properly", as recited by claim 11.

As to point (**D**), Nageswaran teaches the thread manager 132 periodically performs checking the ratio 146 and **determining whether any of threads 138 is idle, not dedicated for any particular transaction, or busy** *(i.e., determining whether at least one of the resources/threads functioning properly)* **(Nageswaran, C3: L8-14 and C4: L6-9)**.

23. Applicant's arguments as well as request for reconsideration filed on 07/22/2005 have been fully considered but they are not deemed to be persuasive.

24. A shortened statutory period for reply to this action is set to expire THREE (3) months from the mailing date of this communication. See 37 CFR 1.134.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang N. Nguyen whose telephone number is (571) 272-3886.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's SPE, Rupal Dharia, can be reached at (571) 272-3880. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see **http://pair-direct.uspto.gov**. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SUPERVISORY PATENT EXAMINER